

(19)



JAPANESE PATENT OFFICE

## PATENT ABSTRACTS OF JAPAN

(11) Publication number: 10047494 A

(43) Date of publication of application: 20.02.98

(51) Int. Cl. F16J 15/34

(21) Application number: 08205054

(22) Date of filing: 02.08.96

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(54) MECHANICAL SEAL FOR HIGH PRESSURE

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## (57) Abstract

**PROBLEM TO BE SOLVED:** To establish a stable sealing effect of a mechanical seal following variations of its primary ring under higher pressure for a longer period of time, especially for effectively sealing in high-pressure gas, by improving its secondary seal structure for sealing in process fluid and narrowing a gap through which its seal ring is possibly forced out.

**SOLUTION:** A secondary sealing surface 12 of a primary ring 3 and a secondary sealing surface 14 of a disk 9 are brought into airtight contact with each other, and a seal ring 6 fitted into an annular groove 16 formed between an inner and an outer flange part 13 and 15 of the disk. The primary ring 3 is made of material of which elastic modulus and thermal expansion coefficient are smaller than those of a retainer 4 and the disk 9. A relief gap 18 is formed between the inner periphery 3A of the primary ring 3 and the outer periphery of a retainer sleeve, and a fine gap 19 narrower than the relief gap is formed between the outer periphery of the retainer sleeve and the inner circumferential edge of the inner flange part.

